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Letter to the Editor

Inhaled medication and inhalation devices for lung disease in patients with cystic fibrosis: poor adherence and the need to address it

Sir,

Subsequent to the European accord on inhaled medication and inhalation devices in CF [1], and the recent letter outlining key areas for future research [2], we write to emphasise the fundamental importance of simultaneously improving adherence to this type of therapy. This is exceptionally low [3,4] and as such, particularly worrying, with established reliance on nebulisation for the treatment of *Pseudomonas aeruginosa* (*Psa*) and *Burkhoderia cepacia complex* (*Bcc*), and the delivery of hypertonic saline and mucolytics (e.g., dornase alpha). Proliferation of new aerosolised antibiotics (e.g., Aztreonam Lysine), and other pharmacological agents currently in development or clinical trials (e.g., Denufusol and Mannitol), will further heighten the demands of adhering to this type of treatment. Although reducing nebulisation times and developing dry powder preparations may lead to some amelioration, inhalation therapy in CF rarely offers any immediate clinical effect, is cumulatively time-consuming and makes CF 'visible', three factors generically known to be associated with poorer adherence. As drugs do not work in people who do not take them, we believe there is a looming potential for diminished clinical effectiveness from this type of treatment and as such, adherence needs to be addressed with the utmost priority.

Several psychotherapeutic approaches to adherence problems in CF have proved effective [5], but are time-consuming and require expertise. However, some psychological techniques (e.g., problem-solving and solution focused therapies), and tool-kits, which can be incorporated into routine practice by CF team members, show much promise and are currently under investigation. Yet, one of the most important is potentially one of the simplest; establishing effective communication and interaction between patients, their families and health carers. This has been shown to lead to increased satisfaction and improved health outcomes over traditional expert-led consultations [6]. Failure to do so leads to missing important opportunities to discuss adherence problems openly, which in turn, can cause over-treatment, the cessation of medications perceived to be ineffective and failure to understand the impact of CF treatment on patients' quality of life [7,8].

Motivational interviewing (MI) is a framework designed to promote health behaviour change based on four main tenets, (i) establishing conversations and expressing empathy with patients, (ii) developing discrepancies between their thoughts, beliefs and behaviours, (iii) working with resistance to change rather than confronting it and, (iv) supporting the efforts of individuals who attempt to change. The process offers key communicative techniques to utilise during consultations with patients, particularly adolescents and young adults, who exhibit poor adherence. Large studies of MI in a variety of physical health groups support the efficacy of the approach in tackling sub-optimal adherence [9]. Whilst to date there are no published studies aimed specifically at improving adherence to inhalation therapy, we believe there is no reason why principles with established efficacy need to be verified again in CF populations and that enough is known to focus on incorporating the techniques into routine care and evaluating the effectiveness.

We previously reported on a three-month feasibility study of telephone-based MI intervention [10]. This randomly allocated adults with CF to receive MI treatment (MI Group), or telephone-contact which was aimed at simply reviewing progress (Non-Treatment Group). An Adaptive Aerosol Delivery (AAD®) nebuliser with electronic data recording capabilities (Philips Respironics Ltd), was used to record adherence. The short duration of the intervention and small sample size resulted in no statistically significant differences in adherence behaviour however, the MI Group scored higher than the Non-Treatment Group on seven of the nine domains of a CF quality of life measure (CFQ), at the end of the study, including three domains in which they had scored below the Non-Treatment Group at baseline. We attributed this to MI having potentially positive effects on perceptions held by participants about CF. More conclusive, was that patients found telephone-based MI to be acceptable, it being efficient and easy to implement in routine practice. This underscores the feasibility of establishing the approaches in routine CF clinic consultations and follow-ups as opposed to MI being a discrete psychological intervention.

Although MI is becoming increasingly familiar to many health professionals, the evidence is that without training, they do not routinely utilise it [11]. We believe that if the full clinical benefits of nebulised therapies are to be realised in CF patients both now and in the future, open discussions about adherence need to take place routinely during out-patient consultations.

Our focus is now on training CF teams in the principles and practice of MI with the aim of health carers giving consistent messages to patients who are struggling with adherence, whilst at the same time, coordinating the approach and supporting each other in utilising the techniques. Seven teams are currently participating in the training programme which is due for

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completion in December 2010. It comprises of two 4-hour workshops spaced six months apart. The first of these focuses on the foundations of MI and establishing the basic principles of using MI with patients and families in clinical settings. The second focuses on consolidating the skills and then condensing them into brief, consultation-based sessions. Early evaluation of the learning outcomes is encouraging with evidence of the techniques being valued by CF team members and incorporated into practice. Full evaluation utilises a triumvirate of measures (self-report, survey and semi-structured telephone-based interview), and will be disseminated in 2011.

Yours sincerely,

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Alistair J.A. Duff
Regional Paediatric CF Unit,
Leeds Teaching Hospitals NHS Trust, Leeds, UK
Corresponding author. Regional Paediatric CF Unit,
Ward 25 A Floor, Clarendon Wing,
Belmont Grove, Leeds LS2 9NS, UK.
Tel.: +44 113 392 7125.
E-mail address: alistair.duff@leedsth.nhs.uk.

Gary J. Latchford
Regional Adult CF Unit,
Leeds Teaching Hospitals NHS Trust, Leeds, UK

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